A Multidimensional Perspective on Education in Developing Countries

Summary

The aim of this thesis is to increase our knowledge on educational outcomes in low income and lower-middle-income countries by examining the intergenerational correlation of education in multiple dimensions, given the complexity inherent in the concept and the global persistence in the number of early school leavers. We posit that in order to combat the high rate of school dropout among the poor and to increase the intergenerational mobility of education, it is necessary to explore the role played by the reduction in the intergenerational mobility on inequalities that occur early in the lives of children. In other words, gaps that emerge early in life among families that need to be addressed and offset. These are gaps that exist due to inherited limited opportunities from parents and a lack of basic necessities for a comfortable standard of living.

The exploration of the reduction of educational inequalities across generations is on two fronts. First, by increasing opportunities educationally, economically, and socially in society so that the independence of children's education to that of their parents will be enhanced. This may be done through public policies or actions that favour the socioeconomically disadvantaged in the society. Second, by increasing the absolute intergenerational mobility through the easing of deprivations in the households and their consequences, which make that school-aged individuals are more likely to leave school early. More knowledge and insight in these issues may contribute to achieving this goal. We therefore examine whether educational attainment vulnerability in developing countries can be explained by looking at their institutional or contextual characteristics and household deprivation status.

We therefore advance the following hypothesis in **Chapter 1**:

Hypothesis A: Push, pull, and falling out factors are prominent determinants of early school-leaving in both Africa and Asia and context-specific

Hypothesis B: Favourable institutional characteristics are able to reduce the intergenerational correlation of education

Hypothesis C: Intergenerational correlation of education significantly increases with household deprivation

Chapter 2 presents the evidence on early school leaving in the literature using findings from low income and lower-middle-income countries. This is done by a systematic literature review on the causes of early school leaving in Africa and Asia. It comprises of studies published from 2001 to 2018, which are either quantitative, mixed, or qualitative. We review a total of 43

studies. The studies included applied different analyses including logistic regression, linear regression, descriptive statistics, analysis of variance, probit regression, discrete-time logit model, Cox regression model, and narrative studies.

Based on the findings, pull factors, push factors and falling out factors determine early school leaving. However, the pull factors show a very high prominence across Africa and Asia. These pull factors include gender, religion, ethnicity, house work, wage labor, farming, region of residence, ill health, truancy, disability, pregnancy, marriage, age, no self-esteem, late school entry, pre-marital sex, substance use, family-related factors, and environmental factors. The factors which push students away in these findings are inadequate school facilities and quality, unavailable and unskilled teachers, student-teacher conflict, inadequate student assistance, no leisure activities, unsuitable school time, corporal punishment, exam failure, school distance, absenteeism, grade repetition, poor academic performance, and unofficial enrolment. The falling out factors are lack of interest, and unawareness of importance of education. In addition, in Asia, immigration and ethnicity are important factors. This suggests that multi-perspective targeting is required to prevent school dropout. That is, targets that involve family, school, individual, as well as community focus. The findings confirm our hypothesis that push, pull, and falling out factors are prominent determinants of early school-leaving in both Africa and Asia and context-specific.

Chapter 3 looks at the institutional factors that contribute to explaining the relationship between parent's education and children's education. Data for 48 countries in total, from multiple harmonized surveys, are utilised. A total of 149 surveys are included. Using multivariate regressions, we first present the correlation coefficients of the relationship between parent's education and children's education. These coefficients then serve as the dependent variable in the regression analysis with the institutional factors at the second stage. To this end, secondary data are obtained from the household Demographic and Health Surveys (DHS), and from the U.S. Agency for International Development (USAID) and the World Bank data catalogue.

The DHS are nationally representative cross-sectional surveys where data on impact evaluation indicators on the population, health, and nutrition in over 90 countries are represented. The primary respondents of the surveys are women of reproductive age, between 15-49 years, who respond to a household questionnaire and a woman's questionnaire (DHS Program, 2020). The man's questionnaire is responded to by men of reproductive age (typically 15 to 49, 54, or 59). In the household questionnaire, the respondent provides information on household membership,

individual characteristics, household head, health, housing, consumer goods, and living conditions (DHS Program, 2020).

The factors from the USAID and the World Bank data catalogue are part of the world development indicators (WDI) and the worldwide governance indicators (WGI). Corruption estimates, political stability estimates, and voice and accountability estimates are taken from the WGI while the others (GDP, prevalence of HIV, life expectancy at birth, female-male labour force participation, government expenditure on education, pupil-teacher ratio, primary school starting age, primary school duration, secondary school duration, compulsory years of education, fixed telephone subscriptions, and mobile cellular subscriptions) are from the WDI. The WDI is a compilation of high-quality, relevant, and internationally comparable statistics about global development and the fight against poverty (World Bank, 2020b). 1600 time series indicators are contained in the database for 217 countries. These indicators are organized according to six main thematic areas that are poverty and inequality, people, environment, economy, states and markets, global links (World Bank, 2020b).

The WGI are nationally comparable indicators of government selection, monitoring, replacement, effectiveness, and the respect of citizens and the state. The worldwide governance indicators generally report on six broad governance dimensions for over 215 countries and territories. These dimensions are government effectiveness, control of corruption, rule of law, voice and accountability, regulatory quality, and political stability and absence of violence (World Bank, 2019). Specifically, we focus on GDP, the prevalence of HIV, life expectancy at birth, female-male labour force participation, government expenditure on education, pupil-teacher ratio, primary school starting age, primary school duration, secondary school duration, compulsory years of education, fixed telephone subscriptions, mobile cellular subscriptions, the extent of corruption, the extent of political stability, and the extent of voice and accountability. The factors used in this chapter are selected based on data availability. The process looks at the correlation between these factors and the intergenerational correlation of education.

The results show that these institutional factors account for 39% of the explained cross-country variation in the intergenerational correlation of education. The pupil-teacher ratio, primary school duration, and compulsory years of education reduce intergenerational correlation of education by 0.03 years, 0.03 years, and 0.02 years respectively, following a one standard deviation change in the variables. Besides these variables, GDP, female-male labour force participation, and extent of voice and accountability reduce intergenerational correlation of

education by 0.01 years, 0.03 years, and 0.03 years respectively, following a one standard deviation change in the variables. This confirms our second hypothesis on favourable institutional characteristics being able to reduce intergenerational correlation of education.

Chapter 4 is a case study of how changes in institutional factors may be used to offset the effect of parent's education on children's education by improving educational attainment of children. We use the extension of compulsory education in 2004 in Senegal from primary to lower secondary. This involves observing the marginal impact of the increase in the number of years of compulsory education on compulsory school completion (grade 10 completion) and on changes in post-compulsory grades completion (grades 11 to 13 completion). The data used is the 2017 survey on Senegal. The analysis comprises of a treatment group (individuals aged 13 to 15) and a control group (individuals aged 16 to 18). This is because the new school leaving age is 16, therefore, individuals 16 years and above are not affected by the policy while those 15 years and below are affected by the policy. A logistic regression discontinuity and chi-square tests are applied.

The policy substantially increased grade 10 completion for children aged 13 to 15 as compared to children aged 16-18. This shows that the effect of the change in the compulsory education law on compulsory school completion is highly significant and positive for these marginal learners. Treatment group individuals are 7% more likely to complete lower secondary education as compared to the control group individuals. In terms of gender, no statistically significant gender differential effect is found of the increase in compulsory education. On the completion of post-compulsory school grades or high school grades (grades 11, 12, and 13), the chi-square tests of association show that the completion of grade 11 and the completion of grade 12 are significantly associated with the education policy for these marginal learners. Therefore, more individuals completed grades 11 and 12 in the treatment group (those aged 13 to 15) as compared to the control group (those aged 16 to 18).

However, completion of grade 13 shows no statistically significant association with the education policy. That is, there is no change in obtaining a high school certificate. Nevertheless, the positive impact of the change in compulsory education years on grades 10 to 12 provides support for the hypothesis that favourable institutional characteristics are some of the channels through which intergenerational correlation of education can be reduced, by means of the improvement of educational attainment of children. This confirms the correlation between the compulsory years of education and the intergenerational correlation of education in Chapter 3.

Children in countries with a higher number of years of compulsory education face higher intergenerational mobility in education. That is, the higher the compulsory education years the lower the intergenerational correlation of education.

Chapter 5 focuses on the differential relationship between parent's education and children's education in the presence of deprivation. The DHS data are also used in Chapter 5. The analysis is done using ordinary least squares to produce correlation coefficients and interaction terms for these relationships. The indicators used include child mortality, school attendance of school-aged children, cooking fuel, sanitation, drinking water, housing, electricity, and assets. The DHS data include surveys for twenty-seven developing countries. They were conducted between 2012 and 2018, the survey years vary between countries.

From our findings, a deprivation index of these variables shows a strong relationship between being deprived and the intergenerational correlation of education of 0.02 years. That is, an additional 0.02 years increase in children's education following a 1-year change in parent's education for the deprived. The result confirms our third hypothesis which said that the: Intergenerational correlation of education significantly increases with household deprivation. Individually, school attendance, cooking fuel, sanitation, drinking water, housing, electricity, and assets have a relationship between being deprived and the intergenerational correlation of education. This relationship ranges between 0.05 years for drinking water and electricity to 0.09 years for housing and assets.

Chapter 6: Most of the institutional and family environment factors in this thesis that correlate with the intergenerational correlation of education are part of the sustainable development goals (SDGs) of the United Nations. The SDGs were designed in 2015 to achieve a better and more sustainable future for all. This thesis shows that a comprehensive achievement on these SDGs has to be mindful of the environmental, social, and economic development aspects of change. The analyses of the intergenerational correlation of education in connection with institutional characteristics and household environment provides an understandable picture of the transmission of education from one generation to the other. Although the correlational coefficients may be quite small, they suggest how equality of opportunity may change in response to increased social mobility.

A policy implication from this thesis is that in an effort to increase educational attainment, and, consequently, to partly reduce the intergenerational correlation of education, institutional

characteristics and households' circumstances should be taken into consideration. We therefore propose guidelines for the progress towards improving the degree of independence of a child's educational attainment to his/her parent's educational level, and improving the pathway enabling children to exceed the educational level of their most educated parent in developing countries. Efforts should be made to ameliorate economic development, such as promoting more industrialization (or improving manufacturing skills) and training programs, and trade exchange in favour of technology import. Industrial improvement requires labour and education, which may in turn create more opportunities and a more higher education-oriented generation. An increase in GDP is therefore a vital input in improving outcomes like employment, decent work and economic growth, and empowering educational decisions, investment, and actual mobility. In addition, education provision and the quality of education such as more teachers to student ratio, and many years of compulsory education so students spend more time at school obligatorily, contribute to increasing intergenerational mobility in education.

Access to basic education by households is also vital, as cost to school still act as hindrances to higher education. Despite the global acceptance of a free basic education, some basic learning institutions in low- and middle-income countries still operate on fee collection. The governance structure such as voice and accountability should carefully be observed. In other words, the motivation to go to higher education also relates to how governance is handled in terms of freedom and rights to citizens to practice association, expression, and voting. In addition, attention should be paid to household deprivation that may affect school attendance and retention and which may increase the number of out of school children. Besides enabling the availability of basic services, policies could motivate and encourage students for higher education earlier.

It is our recommendation that the analysis of intergenerational correlation of education in low income and lower-middle-income countries should use a multidimensional perspective, and importantly, that these countries also place strategic focus on the SDGs. Because focusing on one of them in isolation would not provide a richer picture of improving educational mobility but a combination of multiple factors as complements to one another is relevant to public policy.

In conclusion, these findings provide insight into some of the situations surrounding households and economies with persistent low intergenerational mobility of education and the way the institutions and household environments can be assessed and ameliorated to further provide comfort and means to higher levels of schooling. They shed light on the multifaceted nature of

solutions to educational improvement which comprise of both micro level and macro level circumstances surrounding school goers. These circumstances are considered the responsibility of all stakeholders in society ranging from the state to the direct household members on which children rely on for their early childhood development and educational attainment.